Flow sensors and flow meters

Everything flows. With no ifs or buts.

ifm.com/cnt/flow

Contents

Everything flows.
With no ifs or buts.
Flow meters and flow sensors for
every application

Efficiency is the prevention of waste. Whether compressed air, water, liquid or creamy foods and oils of any viscosity, all these media have one thing in common: they must be transported through pipes and in precise quantities to their destination. This is the only way to ensure maximum product quality, reduce waste and costs and conserve resources.

Our sensors guarantee accurate and permanent flow control of your medium. We have the right solution for every application ranging from the use of finest industrial gas to ultra-pure water and lubricating oil.
And what's best: many of those sensors are equipped with IO-Link. This enables you to gather even more information at IT level from each individual sensor, such as temperature, pressure or total flow rate of the medium. This makes it easy to identify leaks and detect filling quantities.

You see: There are many good reasons to rely on ifm sensor technology for flow measurement. And because we are more than convinced of our products, we offer a 5-year warranty. Which solution suits you best? Let's find out.

5YEARS
Warranty
on **ifm products**

**The right product
for your application**
ifm.com/cnt/flow-medium

Absolute measurement	Sensor type	Medium	Measuring range
Magnetic-inductive	SM	Water, glycol, coolants	0.005...900 l/m
	SM Foodmag	Water, food[1]	1...10000 l/min
Vortex	SV display	Water, deionised water, glycol, coolants	1...100 l/min
	SV	Water, deionised water, glycol, coolants	0.5...150 l/min
Mechatronic	SB water	Water	0.2...350 l/min
	SBT	Water, glycol, coolants	0.3...200 l/min
	SBU	Water, glycol, coolants	0.3...75 l/min
	SBZ	Water, glycol, coolants	1...50 l/min
	SB oil	Oil	0.03...200 l/min
Ultrasonic	SU	Water, deionised water, Glycol, coolants, oil	1...1000 l/min
	SUH	Water, deionised water	1...1000 l/min
Thermal – compressed air meter	SD	Compressed air, industrial gases	0.05...700 m³/h
	SDG	Compressed air, industrial gases	8...17480 m³/h
Thermal – air gap sensor	SDP	Compressed air	0...400 µm

Relative measurement	Sensor type	Medium	Measuring range
Thermal – flow sensors	SI	Water, glycol, coolants, fresh and exhaust air	3...100 cm/s
	SR/SN/SF	Water, glycol, coolants, fresh and exhaust air	3...100 cm/s
	SA	Water, glycol, coolants	3...300 m/s
Thermal – airflow monitors	SA air	fresh and exhaust air	0.6...30 m/s
	SL	fresh and exhaust air	100...3000 cm/s

Medium temperature [°C]	Max. Pressure rating [bar]	Approvals*	Page
-20...90	16	EC1935/2004, KTW, ACS, Reg31, DNV-GL	06 - 07
-20...150	40	FCM, FDA, EC1935/2004, 3A	08 - 09
-10...90	12		
-15...125	16	WRAS, ACS, KTW [2]	10 - 11
-10...100	80		12 - 13
10...180	40		12 - 13
0...60	200		12 - 13
-10...100	200		12 - 13
-10...100	100		14 - 15
-20...100	100	Reg31, ACS, KTW	16 - 17
-20...100	25	Reg31, ACS, KTW, 3A, FDA, EC1935/2004	16 - 17
-10...60	50	DNV-GL, KR	18 - 19
-10...60	16	DNV-GL, KR	20 - 21
-10...60	16		22 - 23

Medium temperature [°C]	Max. Pressure rating [bar]	Approvals*	Page
-25...80	300	EHEDG, FDA, FCM, 3A, EC1935/2004, ACS, DNV-GL, KTW, ATEX II 3G, ATEX II 3D	24 - 25
-25...120	300	Reg31, ATEX II (1G, 2G)	26 - 29
-20...100	100	FDA, Reg31, KTW, ACS, FCM, DNV-GL, EC1935/2004	30 - 31
-20...10	100		30 - 31
-10...50	1		32 - 33

Magnetic-inductive flow meters for water and emulsions

Flow meter type SM

- Version with display
- Pressure-resistant up to 16 bar
- Easy and intuitive to use via pushbuttons
- Medium temperature -10...70 °C
- As an option also with ISO calibration certificate, order no. ZC0052

Flow meter type SM

- Version without display
- Pressure-resistant up to 16 bar
- Medium temperature -10...70 °C

Measuring range [l/min]	Pressure rating [bar]	Process connection	Sealing material	Order no.
Display · DC · PNP / NPN · analogue · pulse · IO-Link				
0.005...3	10	G ¼ (DN6)	FKM	**SM4000**
0.1...25	16	G ½ (DN15)	FKM	**SM6000**
0.2...50	16	G ¾ (DN20)	FKM	**SM7000**
0.2...100	16	G 1 (DN25)	FKM	**SM8000**
0.005...3	10	G ¼ (DN6)	EPDM	**SM4100**
0.1...25	16	G ½ (DN15)	EPDM	**SM6100**
0.2...50	16	G ¾ (DN20)	EPDM	**SM7100**
0.2...100	16	G 1 (DN25)	EPDM	**SM8100**
Display · DC · 2 analogue outputs				
0.1...25	16	G ½ (DN15)	FKM	**SM6004**
0.2...50	16	G ¾ (DN20)	FKM	**SM7004**
0.2...100	16	G 1 (DN25)	FKM	**SM8004**
DC · analogue· IO-Link				
0.1...25	16	G ½ (DN15)	FKM	**SM6050**
0.2...50	16	G ¾ (DN20)	FKM	**SM7050**
0.2...100	16	G 1 (DN25)	FKM	**SM8050**

Variants with NPT and R thread also available.

Ready for use:
The SM series measures liquids up to 900 l/min with a conductivity from 20 µS/cm and temperatures up to 90 °C.

Performance:
High accuracy, repeatability and measurement dynamics.

Versatile:
With volumetric flow, total quantity and temperature display as well as simulation mode.

Variable:
Can be used for different flow directions.

Optimised design:
allows for parallel installation in standard splitter boxes and eliminates the need for inlet and outlet pipe lengths

IO-Link

MID TECHNOLOGY

Wear-free measuring principle
The measurement is made on Faraday's principle of induction. When a conductive medium flows through a magnetic field, a voltage proportional to the flow velocity is generated
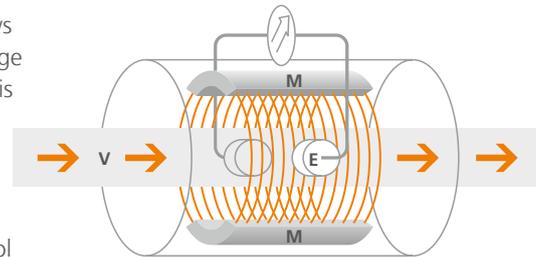
The voltage is tapped via electrodes and converted in the evaluation unit to a usable control signal.

Sea water (salt)

Water-glycol mixtures

Water-based coolants

Drinking water

Industrial water

electrical conductivity

SM type flow meter automation
- New measuring pipe design reduces pressure losses
- Clearly visible TFT display
- Medium temperature -20...90 °C
- As an option also with ISO calibration certificate, order no. ZC0054

Measuring range [l/min]	Process connection	Sealing material	Order no.
Display · DC · PNP / NPN · analogue · pulse · IO-Link			
0.005...5	G ¼ (DN6)	FKM	**SM4020**
0.005...5	G ¼ (DN6)	EPDM	**SM4120**
0.05...35	G ½ (DN15)	FKM	**SM6020**
0.05...35	G ½ (DN15)	EPDM	**SM6120**
0.1...75	G ¾ (DN20)	FKM	**SM7020**
0.1...75	G ¾ (DN20)	EPDM	**SM7120**
0.2...150	G 1 (DN25)	FKM	**SM8020**
0.2...150	G 1 (DN25)	EPDM	**SM8120**

Flow meter type SM
- Version for high volumetric flows with empty pipe detection
- Medium temperature -10...90 °C

Measuring range [l/min]	Pressure rating [bar]	Process connection	Sealing material	Order no.
Display · DC · PNP / NPN · analogue · pulse · IO-Link				
5...300	16	G 2 (DN50)	FKM	**SM9000**
5...600	16	G 2 (DN50)	FKM	**SM2000**
5...900	16	G 2 (DN50)	FKM	**SM0510**
5...300	16	G 2 (DN50)	EPDM	**SM9100**
5...600	16	G 2 (DN50)	EPDM	**SM2100**
Display · DC · 2 analogue outputs				
5...300	16	G 2 (DN50)	FKM	**SM9004**
5...600	16	G 2 (DN50)	FKM	**SM2004**

Variants with NPT and R thread also available.

Magnetic-inductive flow meter for the food industry

Nominal width	Measuring range m³/h	Order no.		
		Units of measurement: SI, EU With TFT display	Units of measurement: SI, EU, Imperial With TFT display	Units of measurement: SI, EU, Imperial Without TFT display
DN40 (1 ½")	0.3…45.00	**SMF320**	**SMF321**	**SMF350**
DN50 (2")	0.6…72.00	**SMF420**	**SMF421**	**SMF450**
DN65 (1 ½")	1.2…120.00	**SMF520**	**SMF521**	**SMF550**
DN80 (3")	1.8…180.00	**SMF620**	**SMF621**	**SMF650**
DN100 (4")	3.0…300.00	**SMF720**	**SMF721**	**SMF750**
DN125 (5")	4,5…450,00	**SMF820**	**SMF821**	**SMF850**
DN150 (6")	6,0…600,00	**SMF920**	**SMF921**	**SMF950**

SMF flow meters

- IO-Link connectivity
- Operating status LED
- Temperature resistant up to 150 °C
- Flexible and standard-compliant configuration of process connections[1]

Experiencing the Foodmag the virtual way:

Find out more and try out our virtual SM Foodmag
ifm.com/cnt/sm-foodmag

[1]Create your solution with our configurator:
ifm.com/gb/en/configurator/K_200_020_030_SMF

Reliable:
Detects flow of media[2] such as beer, juice or yoghurt in quantities of up to 10,000 l/min.

Versatile:
Output of flow rate, total quantity, temperature, conductivity.

User-friendly:
Industry-standard installation dimensions and flexibly selectable process adapters and seals.

Intuitive:
Easy to set up thanks to app-based menu and guided installation

Hygienic:
Thoroughly tested for long-term product and process reliability in hygienic applications.

IO-Link   IP69K   MID TECHNOLOGY

Order no.		
EPDM	**FKM**	**VQM (silicone)**
E40562	E40542	E40572
E40563	E40543	E40573
E40564	E40544	E40574
E40565	E40545	E40575
E40566	E40546	E40576
E40567	E40547	E40577
E40568	E40548	E40578

Order no.					
Clamp ISO 2852	**Clamp DIN 32676 Series A**	**Welding adapter EN10357 Series A**	**Milk pipe screw connection DIN 11851**	**SMS Process adapters**	**Aseptic flange DIN11864-2A**
E40482	E40492	E40472	E40502	E40512	E40522
E40483	E40493	E40473	E40503	E40513	E40523
E40484	E40494	E40474	E40504	E40514	E40524
E40485	E40495	E40475	E40505	E40515	E40525
E40486	E40496	E40476	E40506	E40516	E40526
E40487	E40497	E40477	E40507	–	E40527
E40488	E40498	E40478	E40508	–	E40528

Sealing ring
- For reliable sealing between hygienic flow meter (SMF series) and process adapter

Process adapters
- For installation in pipes
- Simple, quick and secure mounting
- Food-grade stainless-steel adapters
- Version with leakage port

[2]The SMF is suitable for a variety of foods, such as: soft drinks, juices and smoothies, beer, milk, cream, yoghurt, ice cream, jam, waffle batter

Vortex flow meters for water with and without conductivity

SV flow meters

- Electronically rotatable multi-colour display
- Medium temperature -10...90 °C
- Rotatable process connection

Measuring range [l/min]	Pressure rating [bar]	Process connection	Sealing material	Order no.
Display DC · PNP / NPN · frequency · IO-Link · analogue				
1...20	up to 12	G ½ (DN8)	FKM	**SV4200**
1...20	up to 12	Rc ½ (DN8)	FKM	**SV4500**
2...40	up to 12	G ½ (DN10)	FKM	**SV5200**
2...40	up to 12	Rc ½ (DN10)	FKM	**SV5500**
5...100	up to 12	G ¾ (DN20)	FKM	**SV7200**
5...100	up to 12	Rc ¾ (DN20)	FKM	**SV7500**
Display · DC · 2 analogue outputs				
1...20	up to 12	G ½ (DN8)	FKM	**SV4204**
1...20	up to 12	Rc ½ (DN8)	FKM	**SV4504**
2...40	up to 12	G ½ (DN10)	FKM	**SV5204**
2...40	up to 12	Rc ½ (DN10)	FKM	**SV5504**
5...100	up to 12	G ¾ (DN20)	FKM	**SV7204**
5...100	up to 12	Rc ¾ (DN20)	FKM	**SV7504**

Variants with NPT thread also available.

More information about the vortex flow meters
ifm.com/cnt/vortex-flow

Robust:
Long-term stability thanks to fixed components.

Combined measurement:
Flow meter with integrated temperature measurement.

Versatile:
Can be used for water with and without conductivity.

Individual:
Devices with and without display.

Application-specific:
Ideal for use in the automotive and solar industries.

IO-Link   IP65   IP67

Long-term stable measurement.
The Vortex measuring principle is a proven method for measuring the volumetric flow of water-based liquids. Behind a blunt body, the flowing medium generates swirling vortices. The frequency of these swirling vortices is detected by a piezoceramic measuring element. The frequency is a measure for the flow velocity for that matter.

The volumetric flow can be calculated with the flow velocity and the defined pipe diameter. The measurement results are independent of pressure and temperature fluctuations of the medium.
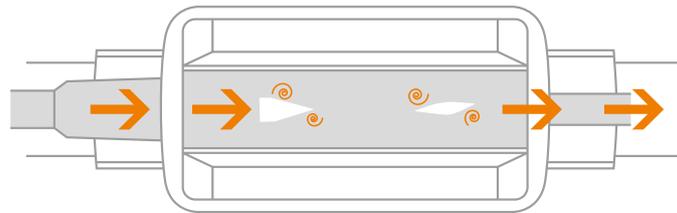
SV flow meters
- Version without display
- Medium temperature -15...125 °C.
- Integrated temperature measurement
- Voltage supply 8…33 V

Measuring range [l/min]	Pressure rating [bar]	Process connection	Sealing material	Order no.
DC · 1 analogue output · PT1000				
0.5...10	up to 16	G ½ (DN6)	FKM	**SV3051**
0.9...15	up to 16	G ½ (DN8)	FKM	**SV4051**
1.8...32	up to 16	G ¾ (DN10)	FKM	**SV5051**
3.5...50	up to 16	G ¾ (DN15)	FKM	**SV6051**
5...85	up to 16	G 1 (DN20)	FKM	**SV7051**
9...150	up to 16	G 1 ¼ (DN25)	FKM	**SV8051**
0.5...10	up to 16	G ½ (DN6)	EPDM	**SV3151**
0.9...15	up to 16	G ½ (DN8)	EPDM	**SV4151**
1.8...32	up to 16	G ¾ (DN10)	EPDM	**SV5151**
3.5...50	up to 16	G ¾ (DN15)	EPDM	**SV6151**
5...85	up to 16	G 1 (DN20)	EPDM	**SV7151**
9...150	up to 16	G 1 ¼ (DN25)	EPDM	**SV8151**

Variants with NPT thread also available.

SV flow meters in use

ifm.com/cnt/bosaq

ifm.com/cnt/ucs

Mechatronic flow sensors for water and emulsions

Mechatronic flow meter type SBY

- Version with display
- Sensing head rotatable by 360°
- Easy switch-point setting via display
- 3-pushbutton operating concept.

Version without display and without temperature measurement.

Measuring range [l/min]	Pressure rating [bar]	Process connection	Order no.	Process connection	Order no.
Display · DC · PNP / NPN · analogue · frequency · IO-Link					
0.3...15	40	Rp ¾ (DN20)	**SBY232**	G ½ (DN15)	**SBG232**
0.5...25	40	Rp ¾ (DN20)	**SBY233**	G ½ (DN15)	**SBG233**
1...50	40	Rp ¾ (DN20)	**SBY234**	G ½ (DN15)	**SBG234**
2...100	25	Rp 1 (DN25)	**SBY246**	G ¾ (DN20)	**SBG246**
4...200	25	Rp 1 ½ (DN40)	**SBY257**	G 1 ¼ (DN32)	**SBG257**
DC · 1 analogue output					
0.3...15	40	Rp ¾ (DN20)	**SBY432**	G ½ (DN15)	**SBG432**
1...25	40	Rp ¾ (DN20)	**SBY433**	G ½ (DN15)	**SBG433**
2...50	40	Rp ¾ (DN20)	**SBY434**	G ½ (DN15)	**SBG434**
4...100	25	Rp 1 (DN25)	**SBY446**	G 1 ¼ (DN32)	**SBG446**
8...200	25	Rp 1 ½ (DN40)	**SBY457**	G 1 ¼ (DN32)	**SBG457**
7...350	25	RP1 ½	**SBY458**	-	**-**
DC - PNP					
0.2...4	80	Rp ½ (DN15)	**SBY321**	-	**-**
1...15	40	Rp ¾ (DN20)	**SBY332**	G ½ (DN15)	**SBG332**
1...25	40	Rp ¾ (DN20)	**SBY333**	G ½ (DN15)	**SBG333**
2...50	25	Rp ¾ (DN25)	**SBY334**	G ½ (DN20)	**SBG334**
5...100	25	Rp 1 (DN40)	**SBY346**	G ¾ (DN32)	**SBG346**
20...200	25	Rp 1 ½ (DN40)	**SBY357**	G 1 ¼ (DN32)	**SBG357**

Variants with NPT thread also available.

Fast and accurate:
Precise detection with a response time of ≤ 10 ms.

Long-term stability:
Guaranteed 10 million switching cycles.

Independent:
No influence by pressure and temperature fluctuations.

Space-saving:
No laminar flow required.

Variable:
Installation independent of orientation.

Combined measurement:
Integrated temperature measurement.

IO-Link   **IP65**   **IP67**

Fast detection.
A spring-based piston is lifted by the flowing medium. The piston position is monitored via a magnetic-field sensor and is output as an analogue signal.

The spring resistance forces the piston to return to its original position with decreasing flow. This allows an orientation-independent installation of the flow sensor. Backflow is prevented.

For installation in the pipe no laminar flow is required as is the case with other measuring principles. The sensor features very fast response times ≤ 10 ms.
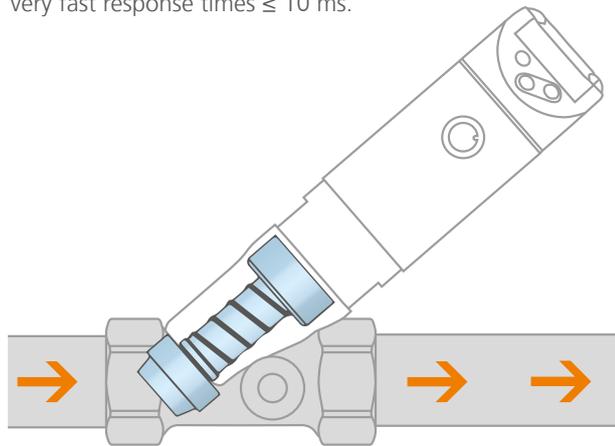
Mechatronic flow meter type SBT
- Version without display
- For high temperatures up to 180 °C.

Measuring range [l/min]	Pressure rating [bar]	Process connection	Order no.
High temperature up to 180 °C			
DC · 1 analogue output			
0.3...25	30	Rp ¾ (DN20)	**SBT633**
0.6...50	30	Rp ¾ (DN20)	**SBT634**
2...100	40	Rp 1 (DN25)	**SBT646**
4...200	25	Rp 1 ½ (DN40)	**SBT657**

Mechatronic flow meters type SBZ and SBU
- For high pressures up to 200 bar
- High sensitivity with small flow rates

Measuring range [l/min]	Pressure rating [bar]	Process connection	Order no.
High pressure up to 200 bar			
DC · 1 analogue output			
0.3...25	200	G ½ (DN15)	**SBU623**
0.6...50	200	G ½ (DN15)	**SBU624**
0.3...75	200	G ½ (DN15)	**SBU625**
DC - PNP			
0.3...25	200	G ½ (DN15)	**SBU323**
0.3...50	200	G ½ (DN15)	**SBU324**
Display · DC · PNP / NPN · analogue · frequency · IO-Link			
1...50	200	G ½ (DN15)	**SBZ224**

Mechatronic flow sensors for oils of different viscosities

Mechatronic flow meter type SB
- Version with display
- High pressure rating
- Temperature-compensated

Measuring range [l/min]	Pressure rating [bar]	Process connection	Oil viscosity [cSt] / [mm²/s]	Order no.
Display · DC · PNP / NPN · analogue · frequency · IO-Link				
0.3...15	80 (100)[1]	G ¾ (DN20)	5	**SB0301**
0.3...15	80 (100)[1]	G ¾ (DN20)	10	**SB1232**
0.5...25	80 (100)[1]	G ¾ (DN20)	10	**SB1233**
1...50	80 (100)[1]	G ¾ (DN20)	10	**SB1234**
2...100	80 (100)[1]	G 1 (DN25)	10	**SB1246**
4...200	50 (63)[1]	G 1 ½ (DN40)	10	**SB1257**
0.3...15	80 (100)[1]	G ¾ (DN20)	32	**SB9232**
0.5...25	80 (100)[1]	G ¾ (DN20)	32	**SB9233**
0.3...15	80 (100)[1]	G ¾ (DN20)	46	**SB2232**
0.5...25	80 (100)[1]	G ¾ (DN20)	46	**SB2233**
1...50	80 (100)[1]	G ¾ (DN20)	46	**SB2234**
2...100	80 (100)[1]	G 1 (DN25)	46	**SB2246**
4...200	50 (63)[1]	G 1 ½ (DN40)	46	**SB2257**
0.3...15	80 (100)[1]	G ¾ (DN20)	68	**SB3232**
0.5...25	80 (100)[1]	G ¾ (DN20)	68	**SB3233**
1...50	80 (100)[1]	G 1 (DN25)	68	**SB3244**
2...100	80 (100)[1]	G 1 (DN25)	68	**SB3246**

[1] at max. 70 °C

Fast and accurate:
High measuring accuracy of +- 5% of the final value and a response time of ≤ 10 ms.

Long-term stability:
Guaranteed 10 million switching cycles.

Independent:
No influence by pressure and temperature fluctuations.

Space-saving:
No inlet and outlet pipe lengths required

Variable:
Installation independent of orientation.

Combined measurement:
Integrated temperature measurement.

IO-Link IP65 IP67

Temperature independent measurement
In case of temperature fluctuations oils change their physical properties such as viscosity. In order to provide accurate measured values, the SB type sensors feature integrated temperature compensation.
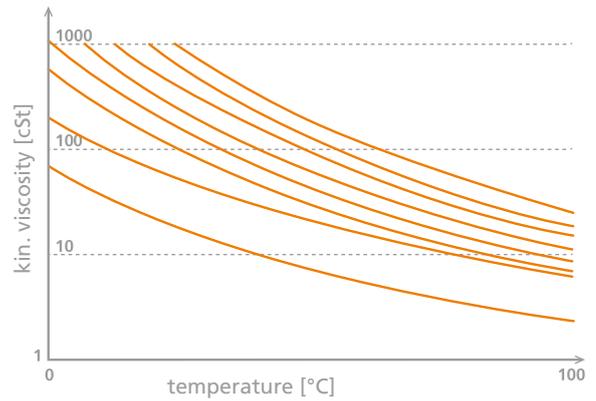
Measuring range [l/min]	Pressure rating [bar]	Process connection	Oil viscosity [cSt] / [mm²/s]	Order no.
Display · DC · PNP / NPN · analogue · frequency · IO-Link				
4...200	50 (63)[1]	G 1 ½ (DN40)	68	**SB3257**
0.3…15	80 (100)[1]	G ¾ (DN20)	100	**SB4232**
1…25	80 (100)[1]	G 1 (DN25)	100	**SB4243**
2…50	80 (100)[1]	G 1 (DN25)	100	**SB4244**
4…100	50 (63)[1]	G1 ½ (DN40)	100	**SB4256**
8…200	50 (63)[1]	G1 ½ (DN40)	100	**SB4257**
0.6...15	80 (100)[1]	G ¾ (DN20)	150	**SB5242**
1...50	80 (100)[1]	G 1 (DN25)	150	**SB5244**
2...100	50 (63)[1]	G 1 ½ (DN40)	150	**SB5256**
0.6...15	80 (100)[1]	G 1 (DN25)	220	**SB6242**
1...25	80 (100)[1]	G 1 (DN25)	220	**SB6243**
0.6...15	80 (100)[1]	G 1 (DN25)	320	**SB7242**
1...25	80 (100)[1]	G 1 (DN25)	320	**SB7243**
2...50	80 (100)[1]	G 1 (DN25)	320	**SB7244**
4...100	50 (63)[1]	G 1 ½ (DN40)	320	**SB7256**
8...200	50 (63)[1]	G 1 ½ (DN40)	320	**SB7257**

[1] at max. 70 °C

Accessories:

For the mounting plate accessories for type SB, please see pages 34 - 35.

Good to know: Program for flow calculation

Scan QR code and calculate flow velocity, flow rate and internal pipe diameter.

ifm.com/cnt/program-flow-calculation

Ultrasonic flow meter for water, emulsions and oils

Flow meter type SU

- Four measured variables: flow rate, total quantity, temperature, signal quality
- Guided set-up possible
- Various nominal diameters and process connections available

More information about SU Puresonic at ifm.com/cnt/puresonic

SU flow meters in use

ifm.com/cnt/steffen-hartmann

ifm.com/cnt/envirofalk

Precise:
Accurate flow measurement of water, ultrapure water, glycol, coolants, oil and food oils.

Component-free stainless steel measuring pipe:
Offers high media resistance and permanent ingress resistance and reduces maintenance.

Transparency:
Conclusions about possible contamination or process changes are possible on the basis of the signal quality provided.

Operating status LED:
Signals the sensor status to the user according to Namur NE107.

Display:
Maximum ease of use and good visualisation.

IO-Link   **IP69K**

Ultrasonic measuring principle
The ultrasonic flow meters of the SU series consist of two transducers that can transmit and receive sound pulses. Transducer A sends a pulse in the direction of flow which is reflected by the medium on the opposite pipe wall and redirected to the receiver (transducer B).

The dwell time in the medium is measured. Then a pulse is sent in the opposite direction. The measuring device measures the time difference and calculates the flow rate.
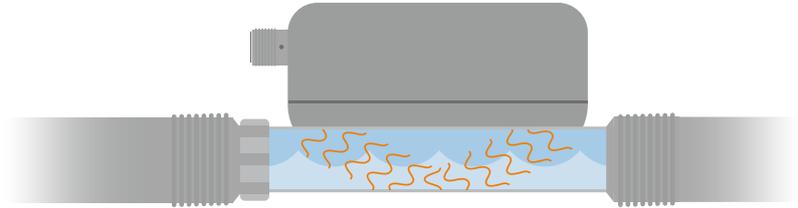
Measuring range		Process connection	Order no.			
			only l/m		l/m + gpm	
[l/min]	[gpm]		Water	Water, glycol, oil	Water	Water, glycol, oil
Display · DC · PNP / NPN · analogue · pulse · IO-Link						
0.5…65	0.13…17.17	G ½ (DN15)	**SU6020**	**SU6030**	**SU6021**	**SU6031**
0.5…75	0.13…19.81	G ¾ (DN20)	**SU7020**	**SU7030**	**SU7021**	**SU7031**
1…240	0.25…63.4	G 1 (DN25)	**SU8020**	**SU8030**	**SU8021**	**SU8031**
1…275	0.25…72.64	G 1 ¼ (DN32)	**SU9020**	**SU9030**	**SU9021**	**SU9031**
5…1000	1.32…264.18	G 2 (DN50)	**SU2020**	**SU2030**	**SU2021**	**SU2031**
0.5…65	0.13…17.17	½ NPT (DN15)	–	–	**SU6621**	**SU6631**
0.5…75	0.13…19.81	¾ NPT (DN20)	–	–	**SU7621**	**SU7631**
1…240	0.25…63.4	1 NPT (DN25)	–	–	**SU8621**	**SU8631**
5…1000	1.32.264.18	2 NPT (DN50)	–	–	**SU2621**	**SU2631**
			Water, edible oils		Water, edible oils	
1…240	0.25…63.4	Clamp 1 - DIN 32676 series C (ASME BPE)	**SUH200**		**SUH201**	
5…1000	1.32…264.18	Clamp 2 - DIN 32676 series C (ASME BPE)	**SUH400**		**SUH401**	

Thermal compressed air meters for air and industrial gases

SD compressed air meter with TFT display

- Four process values: flow, pressure, temperature and overall consumption
- TFT display with four different individually adjustable graphic layouts
- As an option also with ISO calibration certificate, order no. ZC0020.
- DAkkS calibration certificates Order no. ZC0075

Efficient compressed air monitoring with intelligent flow sensors
ifm.com/gb/compressed-air

Measuring range [m³/h]	Pressure rating [bar]	Process connection	Order no.
Defined pipe length for compressed air in industrial use			
Display · DC · PNP / NPN · analogue · pulse · IO-Link			
0.05...15	16	G ¼ (DN8)	**SD5500**
0.25...75	16	R ½ (DN15)	**SD6500**
0.8...225	16	R 1 (DN25)	**SD8500**
1.4...410	16	R 1 ½ (DN40)	**SD9500**
2.5...700	16	R 2 (DN50)	**SD2500**

Variants with NPT thread also available.

Precise compressed air measurement for effective energy management

Following the EU directive on energy efficiency DIN EN ISO 50001, all member states have undertaken to achieve energy savings. The requirement for obtaining energy tax reductions is the implementation of an energy management system.

Combining the new SD compressed air meter with regular DAkkS calibrations provides the optimum basis for this.

Precise:
High precision and repeatability.

Increased energy efficiency:
thanks to integrated leakage monitoring, energy costs can be reduced.

Versatile:
Integrated totaliser for measuring the total consumption. Additional temperature and pressure measurement.

Specific:
Versions for the measurement of industrial gases such as Ar, N_2, CO_2 or helium.

Variable:
Versions that are mounted on a fixed laminar pipe or version for an adjustable pipe diameter without fixed pipe.

IO-Link · IP65 · IP67

Precise detection of even minute quantities
The compressed air meter uses the calorimetric measuring principle to determine the standard volume flow to ISO 2533.

The broad measurement dynamics enables reliable detection of minute quantities, e.g. leakage. High accuracy and repeatability are ensured by the integration of the measuring elements into a defined pipe length.
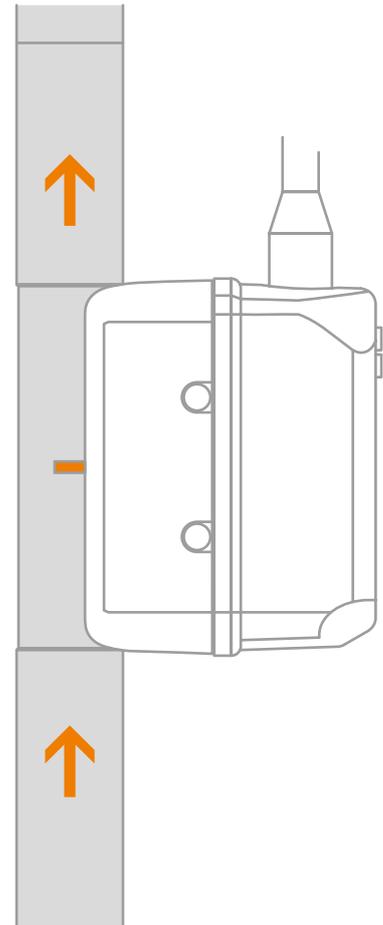
Measuring range [m³/h]	Pressure rating [bar]	Process connection	Order no.
Defined pipe length for technical gases Ar, N_2, CO_2, air			
Display · DC · PNP / NPN · analogue · pulse · IO-Link			
0.05...15	16	G ¼ (DN8)	**SD5600**
0.25...75	16	R ½ (DN15)	**SD6600**
0.8...225	16	R 1 (DN25)	**SD8600**
Defined pipe length for industrial gases; helium			
Display · DC · PNP / NPN · analogue · pulse · IO-Link			
1.4...410	16	G ¼ (DN8)	**SD5800**
2.5...700	16	R ½ (DN15)	**SD6800**

Variants with NPT thread also available.

SD compressed air meter in use
ifm.com/cnt/harting

Compressed air meter with industrial gases
Four gas characteristics and four measuring parameters (current and total volumetric flow, pressure, temperature) turn the SD into an all-in-one solution.

Thermal compressed air meters for efficient compressed air management

Measuring range [m³/h]	Medium	Process connection	Order no.
Defined pipe length for compressed air in industrial use			
Display · DC · PNP / NPN · analogue · pulse · IO-Link			
8...2011	Compressed air	Flange (DN65)	**SDG350**
12...2769	Compressed air	Flange (DN80)	**SDG450**
19...4667	Compressed air	Flange (DN100)	**SDG550**
43...10320	Compressed air	Flange (DN150)	**SDG750**
73...17480	Compressed air	Flange (DN200)	**SDG850**

Compressed air meters type SDG

- Four process values: flow, pressure, temperature and overall consumption
- TFT display with four different individually adjustable graphic layouts
- Easy to use via 3 pushbuttons.
- Easy parameter setting via IO-Link

Offering a wide range of precision inline sensors from DN8 to DN250, ifm covers the complete range of applications.

Precise:
High accuracy, repeatability and measurement dynamics.

Increased energy efficiency:
Improvement of energy efficiency via leakage monitoring

Overview:
Exact allocation of energy costs due to precise consumption measurement

All-in-one:
Integrated totaliser for measuring the total consumption. Additional temperature and pressure measurement.

IO-Link   IP65

Choosing the right sensor:

Article	SDG	SD1540
Accuracy	± (3 % MW + 0.3 % MEW)	± (6 % MW + 0.6 % MEW)

MW = value of the measuring range,
MEW = final value of the measuring range

When choosing the right sensor, accuracy is an important factor. With a consumption of 2750 m³/h (DN80) to be monitored, 3 % measurement deviation corresponds to ± 82,5 m³/h. One undetected leakage due to measurement uncertainty corresponds to a leakage of 5 mm diameter and thus compressed air costs of approx. 6,000 euros per year.

Due to its high accuracy, the SDG can detect even the smallest leaks and reduce compressed air costs.

Measuring range [m³/h]	Medium	Process connection	Pressure rating	Order no.
Variable pipe length for compressed air in industrial use				
Display · DC · PNP / NPN · analogue · pulse · IO-Link				
0.3...26260	Compressed air / nitrogen	G 1	50	**SD1440**
0.3...26260	Compressed air	G 1	16	**SD1540**
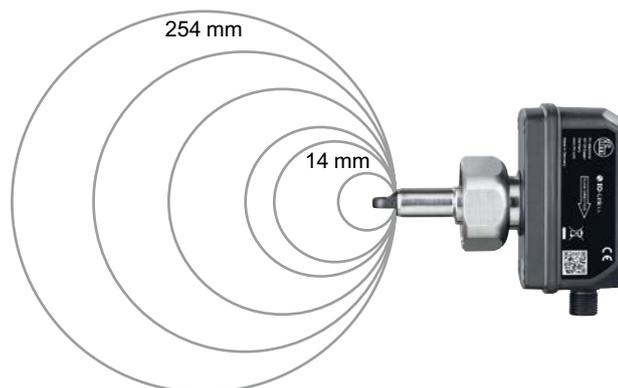
Compressed air meter type SD1540
- Variably adjustable for internal pipe diameter 14...254 mm

254 mm
14 mm

In addition to the inline version, a screw-in version is also available for pipes from 14 to 254 mm diameter.

Air gap sensor for machine tools

SDP flow meter
Zero gap detection
- High pressure rating

Measuring range [m³/h]	Process connection	Order no.
Display · DC · PNP / NPN · analogue · IO-Link		
0...400	G ¼ (DN8)	**SDP110**

Using both flow and pressure measurements, the SDP air gap sensor measures the distance in absolute distance values [mm]: The closer a workpiece is to a measuring nozzle, the lower the quantity of air that flows through the air gap between the workpiece and the measuring nozzle. This makes it possible to secure the position of the workpiece and to clearly detect a zero gap or a clogged nozzle.

Precise:
Output of the air gap as an absolute value with repeat accuracy in the micrometre range.

Reliable:
Accurate values at all times thanks to the pressure-compensated measuring principle.

Overview:
Gap value, flow and pressure – all information at a glance.

Robust:
The self-cleaning measuring channel even withstands the purge air pressure.

Easy:
Easy teaching of target status with just one click.

IO-Link   **IP65**   **IP67**

The SDP110 air gap sensor can measure the distance between the measuring nozzle and the workpiece in the range of 0...500 µm with a repeatability of ± (3% of the measured value + 2 µm). Depending on the application area, this corresponds to an accuracy of up to 5 to 10 micrometres. The repeatability of the sensor is thus up to ten times finer than a human hair.

This creates new, precise solutions, for example for surface quality control, which could not be realised with previous measuring systems.

Surface quality

	Surface 1	Surface 2	Surface 3	Surface 4
Measured value SDP	0 mm	0.003 mm	0.006 mm	0.026 mm
Status HMI	✅	✅	✅	❌

Due to the high precision of the sensor, the surface characteristics have a direct influence on the measurement result.

Part seat monitoring between workpiece and tool table to detect misalignment, e.g. due to chips
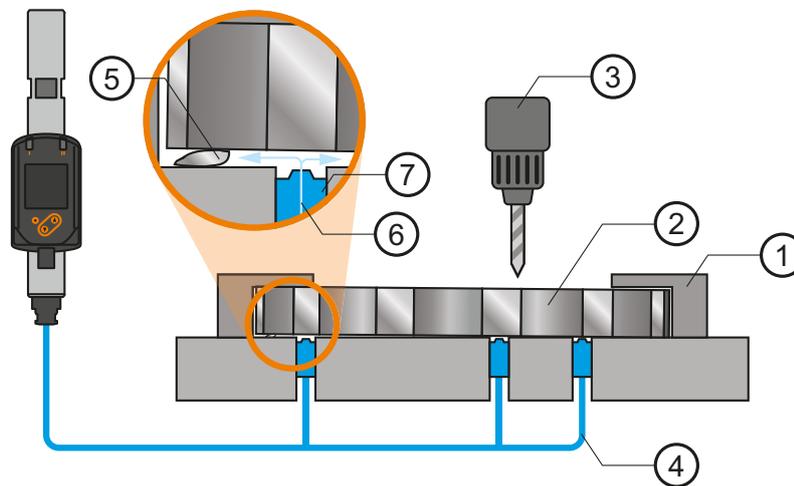
1) Jaw
2) Toothed wheel
3) Drill
4) Compressed air line
5) Chip
6) Air
7) Air nozzle

Typical applications
Part seat monitoring

The new air gap sensor is mainly used in modern machine tools. Here, the positioning between workpiece and tool table, or tool head and tool holder, is monitored. The SDP detects and signals any misalignments, such as those that may result from dirt on the surface. This reliably ensures the quality of the end product.

Learn more about the air gap sensor
ifm.com/cnt/sdp

Compact thermal flow sensors for water, emulsions and air

Flow sensors type SI
- ATEX versions
- Robust housing
- Easy to set

Pressure rating [bar]	Process connection / measuring tip length [mm]	Operating voltage [V]	IO-Link	Order no.
Machine tool applications				
Display · DC · PNP · 1 switching output				
30	M18 nut / 45	24 DC	–	**SI5000**
300	M18 nut / 45	24 DC	•	**SI5010**
Display · DC · PNP · 2 switching outputs				
300	M18 nut / 45	24 DC	•	**SI5002**
Display · DC · 1 analogue output				
300	M18 nut / 45	24 DC	–	**SI5004**
Display · AC · 1 relay output				
300	M18 nut / 45	85...265 AC	–	**SI5006**
Display · DC · PNP · 1 switching output for flow and 1 switching output for temperature				
300	M18 nut / 45	24 DC	•	**SI5007**
Display · DC · PNP · 1 switching output · ATEX category 3D / 3G				
30	M18 nut / 45	24 DC	–	**SI500A**

Robust and clean:
Wetted part materials: high-grade stainless steel, titanium or Hastelloy.

Everything at a glance:
Flow display by means of 10 LED bar graph, measured value output in %.

**Selectable:**
Versions with different outputs.

Flexible:
Variable measuring tip lengths.

IO-Link **IP67** **IP69K**

Measuring principle for liquids and gases
The thermal flow detection is based on the heat dissipation of flowing media (liquids and gases).

In principle, the sensor consists of a heating element and a temperature probe (reference element). The temperature difference between these two elements is a measure for the flow velocity.

Reference element

ΔT

Heated element
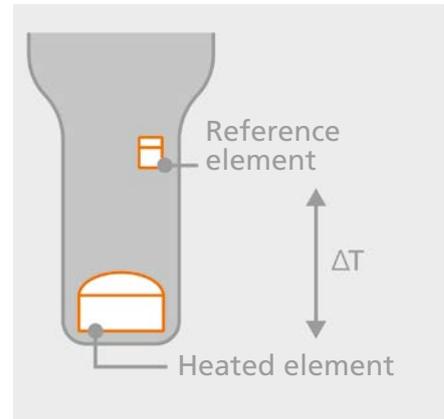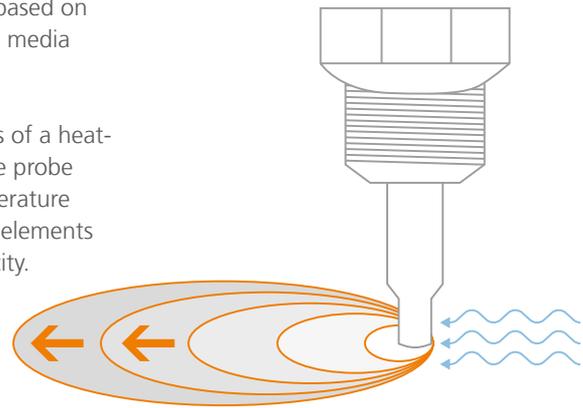
Pressure rating [bar]	Process connection / measuring tip length [mm]	Operating voltage [V]	Order no.
Hygienic applications			
Display · DC · PNP · 1 switching output			
30	G 1 Aseptoflex Vario / 20	24 DC	**SI6600**
30	G 1 Aseptoflex Vario / 38	24 DC	**SI6700**
30	G 1 Aseptoflex Vario / 55	24 DC	**SI6800**

Flow sensors type SI
- Modular adaptation for hygienic applications
- Protection rating IP67 / IP69K

SI flow sensors in use
ifm.com/cnt/leffek

Thermal flow sensors for water, emulsions and air

Flow sensors

SF type flow sensors for connection to SR5900 evaluation units
SR5906
SR0150
SR0151
SN0150
SN0151

Pressure rating [bar]	Process connection / measuring tip length [mm]	Medium emperature [°C]	Material (wetted parts)	Order no.	
Display DC · PNP / NPN · frequency · IO-Link · analogue					
30	Clamping ring / 106	-25...80	V4A	**SF6201**	
30	Clamping ring / 191	-25...80	V4A	**SF6200**	
30	M18 nut / 45	-25...80	V4A	**SF0537**	
300	M18 nut / 45	-25...80	V4A	**SF5200**	
30	M18 nut / 55	-25...80	V4A	**SF5201**	
100	M18 nut / 45	-25...80	Titanium	**SF5700**	
100	M18 nut / 63	-25...80	Titanium	**SF5701**	
100	M18 nut / 93	-25...80	Titanium	**SF5702**	
100	M18 nut / 143	-25...80	Titanium	**SF5703**	
100	M18 nut / 243	-25...80	Titanium	**SF5704**	
30	G ¼ / 12	5...70	Ceramics	**SF2405**	
30	G ½ / 30	5...70	Ceramics	**SF3405**	
Connection cable				**6 m**	**16 m**
300	M18 nut / 45	0...120	V4A	**SF5300**	–
300	M18 nut / 45	-25...80	V4A	**SF5350**	–
100	M18 nut / 45	-25...80	Titanium	**SF5800**	–
30	G ¼ / 12	5...70	Ceramics	**SF2410**	**SF0540**
30	G ½ / 30	5...70	Ceramics	**SF3410**	–

Space-saving:
Flow sensors for connection to separate evaluation unit.

Robust and clean:
Wetted part materials: high-grade stainless steel, titanium or ceramics.

Flexible:
Variable measuring tip lengths.

Resistant:
High pressure rating

IP65   IP67

Flow sensors

SF type for connection to SR2301 evaluation units
SN2301
SN2302
SR0151
SN0150
SN0151

Pressure rating [bar]	Process connection	Medium temperature [°C]	Material (wetted parts)	ATEX category	Order no.
ATEX applications					
Connection via M12 connector					
30	M12	-20...70	V4A	2G	**SF120A**
30	G ¼	-20...70	V4A	2G	**SF220A**
Connection cable, 6 m					
300	M12	-20...60	V4A	1G / 2G	**SF111A**
30	M12	-20...70	V4A	2G	**SF121A**
300	G ¼	-20...60	V4A	1G / 2G	**SF211A**
30	G ¼	-20...70	V4A	2G	**SF221A**
300	G ¼	-20...60	V4A	1G / 2G	**SF311A**
30	G ¼	-20...70	V4A	2G	**SP321A**[1]

[1]connection only to the evaluation unit SR307A

Good to know
titanium tips are particularly suitable for aggressive media.

Accessories:

For evaluation units please see pages 34 - 35

Evaluation units for thermal flow sensors

Evaluation unit for flow sensors type SF
- Relay energises in case of flow and de-energises in case of wire break

Relay temperature	Nominal voltage [V]	For sensor type	Order no.
Field installation			
–	24 DC	SFxxx M12 connector	**SR5900**
–	90...240 AC	SFxxx M12 connector	**SR5906**
Control cabinet installation			
energises	24 DC	SFxxx	**SR0150**[1]
energises	24 DC	SFxxx	**SR0151**[2]
energises	90...240 AC	SFxxx	**SN0150**
de-energises	90...240 AC	SFxxx	**SN0151**

[1]Temperature range 0...80 °C   [2]Temperature range 40...120 °C

Space-saving:
Separate evaluation units for connection of flow sensors.

Clear:
Flow indication by means of LED function display.

Selectable:
Versions with different outputs.

Comprehensive:
Integrated flow, temperature and wire monitoring.

IP65
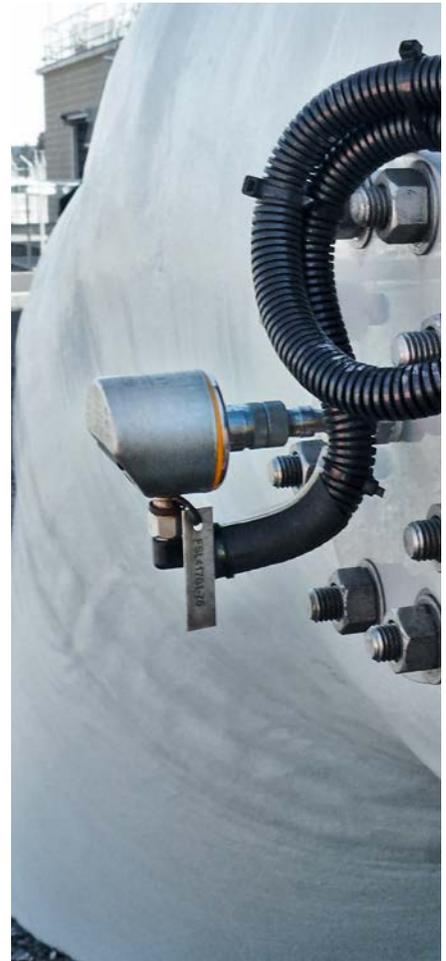
Relay temperature	Operating voltage [V]	For sensor type	Order no.
Control cabinet installation, for ATEX sensors			
–	24 DC	SFxxxA	**SR2301**
–	230 AC	SFxxxA	**SN2304**
–	110 AC	SFxxxA	**SN2302**
de-energises	24 DC	SP321A	**SR307A**

Evaluation unit for ATEX flow sensors type SF
- Relay energises in case of flow and de-energises in case of wire break
- Type SR307A with 4-wire technology and 5 setting options (water, air, glycol, oils of low and high viscosity)

Accessories:

For sensors please see pages 34 - 35

Thermal flow sensors for water, emulsions and air

%
m/s
l/min
m³/h
°C

100 mm   45 mm   200 mm

Flow sensor type SA

- Sensor head rotatable by 345°
- 2 switching outputs
- Easy switch-point setting via display
- 3-pushbutton operating concept
- Fast response time for flow and temperature measurement

Pressure rating [bar]	Process connection / measuring tip length [mm]	Medium temperature [°C]	Order no.
Fixed measuring section for liquid media			
Display · DC · PNP / NPN · analogue · frequency · IO-Link			
30	M18 nut / 45	-20...90	**SA5000**
30	G ½ / 19,2	-20...90	**SA2000**
30	Ø 8 mm / 100	-20...100	**SA4100**
300	Ø 8 mm / 200	-20...100	**SA4300**
Display · DC · 2 analogue outputs			
100	M18 x 1.5 internal thread	-20...90	**SA5004**
100	G ½ / 19,2	-20...90	**SA2004**
100	Ø 8 mm / 100	-20...100	**SA4104**
100	Ø 8 mm / 200	-20...100	**SA4304**
Fixed measuring section for fresh and exhaust air			
Display · DC · PNP / NPN · analogue · frequency · IO-Link			
-	M18 x 1.5 internal thread	-20...90	**SA5020**
-	Ø 8 mm / 100	-20...100	**SA4120**
-	Ø 8 mm / 100	-20...100	**SA4320**

Variants with NPT thread also available.

Robust:
The full metal probe is resistant to aggressive media.

Flexible:
Adjustable internal pipe diameter of 15...400 mm.

Variable:
Measured values output in %, m/s, l/min, m³/h und °C.

Combined measurement:
Integrated temperature measurement.

Unambiguous:
Red/green colour change for process values.

IO-Link   IP67

400 mm

15 mm
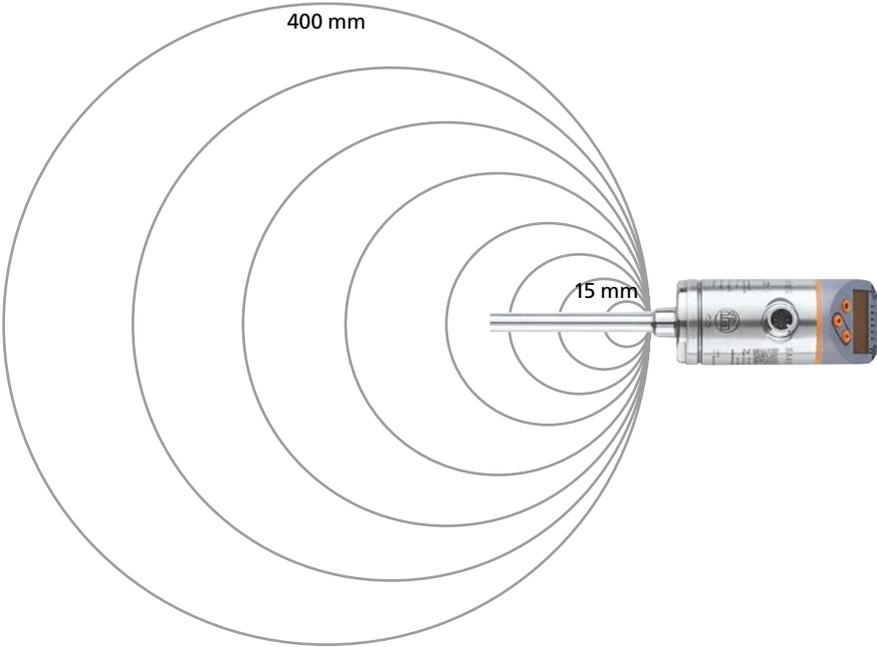
Adjustable internal pipe diameter of 15 to 400 mm for absolute value display.

Suitable connection technology is available at ifm.com

SA flow sensors in use
ifm.com/cnt/bosaq

Thermal airflow monitors for air ducts

Thermal airflow monitor type SL

- Housing materials: PBT, sensing face: Titanium
- Status LEDs
- Process connection: Ø 23 mm

Supplied accessories
Mounting clamp for airflow monitor

Setting range [cm/s]	Operating voltage [V]	Ambient temperature [°C]	Connection cable [m]	Order no.
AC · relay				
100...1000	< 24 AC	-10...50	2	**SL0201**
AC / DC · relay				
100...1000	80...250 AC / 90...250 DC	-10...50	6	**SL0105**
100...1000	80...250 AC / 90...250 DC	-10...50	2	**SL0301**
DC · relay				
100...1000	24 DC	-10...50	2	**SL5105**
100...1000	24 DC	-10...50	2	**SL5101[1]**
100...1000	24 DC	-10...50	6	**SL5102**
DC · analogue				
200...3000	24 DC	-10...40	2	**SL5204**
200...3000	24 DC	-10...50	2	**SL5201**

[1] with power-on delay time

Reliable:
High protection rating for use in ventilation systems in building automation.

Easy to install:
Easy setting of the requested immersion depth.

Versatile:
Signal output via potential-free relay contacts or precisely via analogue output.

Easy:
Switch point setting via potentiometer.

IP65

Thermal measuring principle.
The airflow monitor SL is mainly used in ventilation units of building management systems to monitor sufficient air supply. It uses the thermal measuring principle. The sensor consists of a heating element and a temperature probe (reference element).

The temperature difference between these two elements is a measure for the flow velocity.

reference element

heated element
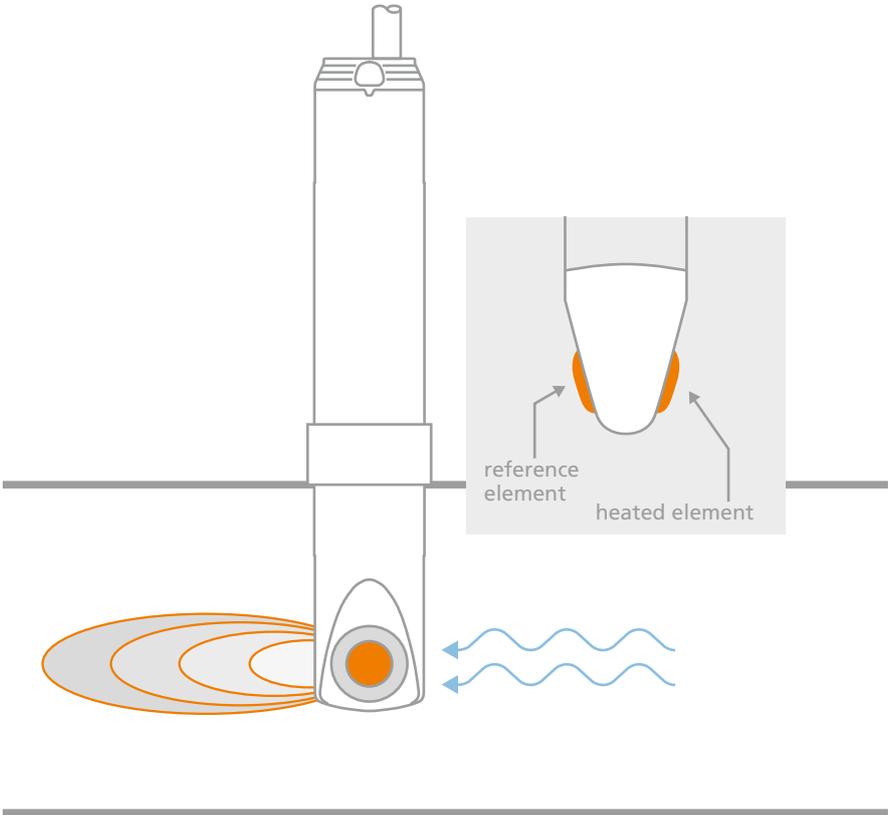
Process adapters and mounting accessories for flow sensors and flow meters

Process adapters for type SM

Measuring range [l/min]	Process connection	Sealing material	Order no.	For sensor type
R ½	G ½	V4A	**E40199**	SM6xxx
G ½	G ½	V4A	**E40213**	SM6xxx
G ¾	G ½	V4A	**E40189**	SM6xxx
R ½	G ¾	Brass	**E40151**	SM7xxx
R ½	G ¾	V4A	**E40178**	SM7xxx
G ½	G ¾	V4A	**E40214**	SM7xxx
G ¾	G ¾	V4A	**E40216**	SM7xxx
R ½	G 1	Brass	**E40152**	SM8xxx
R ¾	G 1	Brass	**E40153**	SM8xxx
R ½	G 1	V4A	**E40179**	SM8xxx
R ¾	G 1	V4A	**E40180**	SM8xxx
G ¾	G 1	V4A	**E40215**	SM8xxx
G 1	G 1	V4A	**E40217**	SM8xxx
1,5" Victaulic	G 2	V4A	**E40227**	SM9xxx, SM2xxx
R 2	G 2	V4A	**E40231**	SM9xxx, SM2xxx
G 1 ½	G 2	V4A	**E40230**	SM9xxx, SM2xxx
Flange DN50	G 2	V4A	**E40240**	SM9xxx, SM2xxx

Grounding clamp for SM design

Description	Material	Order no.	For sensor type
Grounding clamp	V4A	**E40234**	SMxxxx

Accessories for SV flow sensors

Description	Material	Order no.	For sensor type
Mounting plate	V4A	**E40249**	SVxxxx[1]

[1] version with display

Mounting plate for SB housings

Description	Material	Order no.	For sensor type
Mounting plate	Stainless steel	**EM0012**	SBxxxx

Mounting adapter for SA air type flow sensors

Description	Material	Order no.	For sensor type
Mounting adapters for flow sensors	Stainless steel	**E43909**	SAxx2x

Process adapters for type SU

Process connection	Device connection	Material	Order no.	For sensor type
R ½	G ¾	V4A	**E40178**	SU7xxx
½ NPT	G ¾	V4A	**E40191**	SU7xxx
G ½	G ¾	V4A	**E40214**	SU7xxx
G ¾	G ¾	V4A	**E40216**	SU7xxx
R ½	G 1	V4A	**E40179**	SU8xxx
R ¾	G 1	V4A	**E40180**	SU8xxx
½ NPT	G 1	V4A	**E40192**	SU8xxx
¾ NPT	G 1	V4A	**E40193**	SU8xxx
G ¾	G 1	V4A	**E40215**	SU8xxx
G 1	G 1	V4A	**E40217**	SU8xxx
R 1	G 1 ¼	V4A	**E40205**	SU9xxx
1 NPT	G 1 ¼	V4A	**E40206**	SU9xxx

Angle bracket for type SU

Description	Material	Order no.	For sensor type
Mounting set 2 angle brackets	stainless steel	**E40166**	SUxxxx

Process adapters for flow sensors type SI, SA

Process connection	Device connection	Material	Order no.	For sensor type
G ½	M18	V4A	**E40096**	SI5xxx, SA5xxx
G ¼	M18	V4A	**E40099**	SI5xxx, SA5xxx
G ½	M18	Brass	**E40097**	SI5xxx, SA5xxx
G ¼	M18	Brass	**E40098**	SI5xxx, SA5xxx
G ½	Progressive ring	V4A	**E40258**	SA4xxx
G ¾	Progressive ring	V4A	**E40259**	SA4xxx
R ½	Progressive ring	V4A	**E40263**	SA4xxx
Clamp 1...1.5"	Aseptoflex-Vario	V4A	**E33201**	SI66xx, SI67xx, SI68xx
Varivent type F 1"	Aseptoflex-Vario	V4A	**E33221**	SI66xx, SI67xx, SI68xx

The converter transforms IO-Link process values into two analogue signals 4...20 mA

Number of analogue outputs	Precision of analogue output	Protection rating	Order no.
2	± 0.25 %	IP67 / IP69K	**EIO104**

Back to normal
ifm's calibration service ensures reliable processes and product quality

One bar is one bar, eleven degrees are eleven degrees and four-point-three litres are four-point-three litres. How nice it would be if it were always that simple. If process sensors measured as accurately and precisely throughout their lives as they did on their first day. But they don't. Over time, they become inaccurate and drift due to the constant stress. The extent to which they do so is determined and documented in the course of calibration. This deviation can then be taken into account in the control system (as long as it is still within the tolerance range), so that the temperature, pressure, flow etc. are correctly maintained until the end of the process and the quality of the product is assured.

True, precise, accurate
What exactly happens during such a calibration? Well, it is determined how true, precisely and accurately a sensor actually still fulfils its original task - measuring. True? Precise? Accurate? Isn't that the same thing? In this case: no. We can explain this in detail if you are interested in the differences between these terms. Or you can take a look at our website. There we have presented the three criteria in a comprehensible way.

Accredited competence for traceable calibration
Why do we focus so much on these three criteria? Because that is our service for you. In other words: because we calibrate your ifm sensors for you and examine the measuring precision, the measuring trueness and the measuring accuracy very closely. Namely for pressure, temperature, flow and analysis sensors.

And, as an accredited laboratory, traceable to the highest standard size in the hierarchy. In Germany, for example, these are guarded by the Physikalisch-Technische Bundesanstalt (highest-ranking national authority for metrology). Professional knowledge in passing: the standard sizes are internationally valid and are still being further refined today. (If you are interested, just search the net for the Avogadro project or the Boltzmann constant.)

Out of tolerance? Minimal loss of time!
But before we go into further raptures and revelry about standard sizes, let's get back to our offer to you. Whenever you want to calibrate your ifm process sensor: contact us. We have the precise equipment required to accurately calibrate your sensors. Incidentally, we offer a free factory certificate for many of our process sensors even before initial delivery, which shows whether the sensors work within their specified accuracy. So you can use them in your process with peace of mind. What's more, we know our sensors and have a replacement device ready should your sensor fail the recalibration. In such a case, the downtime for you is reduced to a minimum.

Sounds good? We think so, too. That is why we are so pleased to offer you this service.
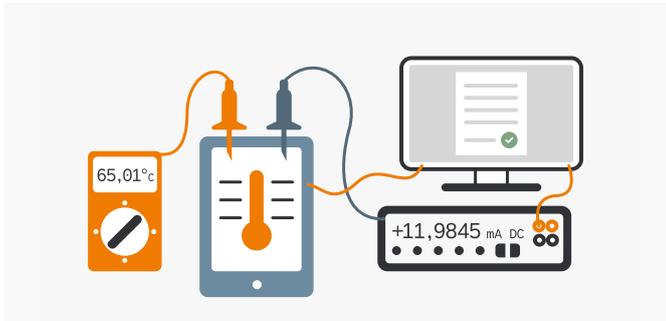
Liquid bath temperature calibration
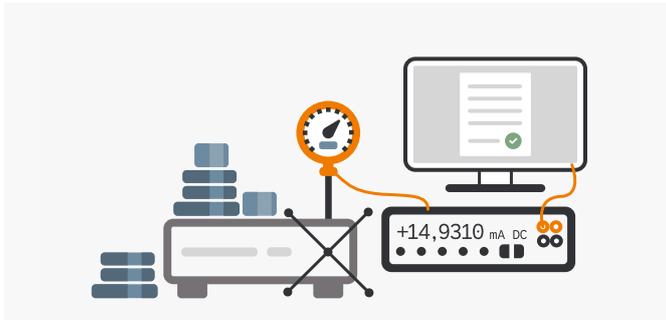
Calibration of pressure gauges by using pressure compensators
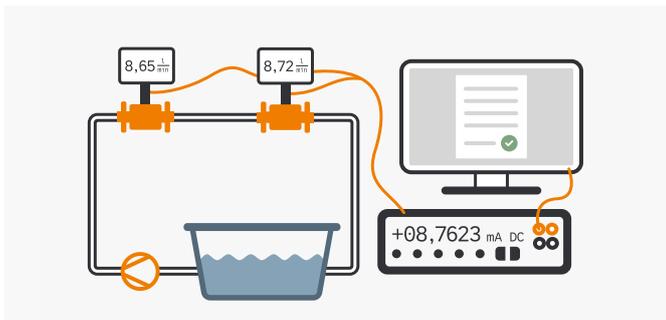
Calibration of water flow sensors
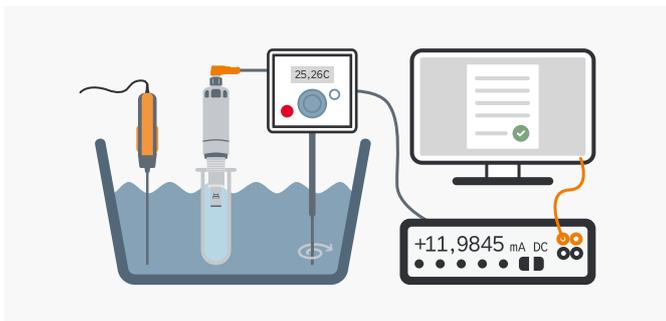

Calibration of analytical sensors

What does "calibration" mean anyway?
Calibration is the act of determining and documenting, in a traceable manner, the deviations between a measuring instrument called device under test (DUT) and a reference device called reference standard.

The result of this comparison shows the measuring deviations at different measurement points and can be provided in absolute or relative form. The regular calibration of measurement instruments ensures the precision and reproducibility of the measurement data. The reference measurement is made with a reference device.

Traceability refers to the uninterrupted chain of comparative measurements related to the measuring results of a measuring instrument and the specific, higher-ranking national standard.
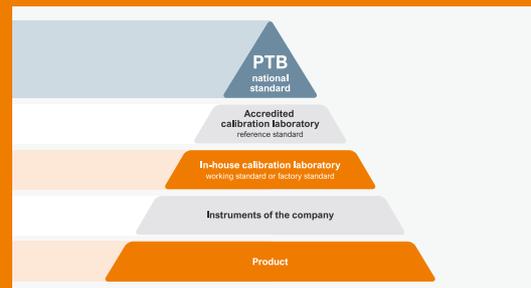
Find out more about the calibration service
ifm.com/cnt/calibration-service

Sensors for transparency and efficiency

Compressed air is one of the most expensive forms of energy in industry. Thus, it is important to closely monitor its consumption.

ifm.com/cnt/harting
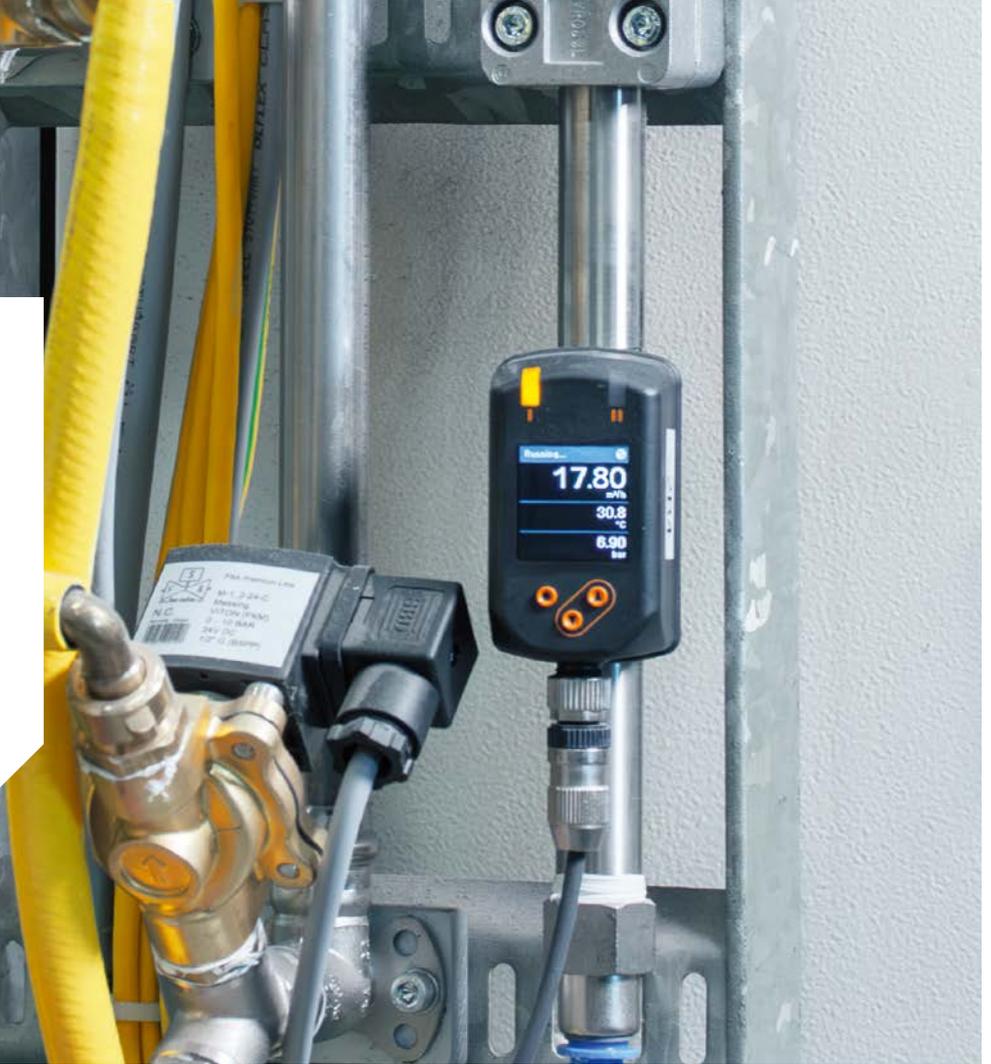
Efficient cooling circuit monitoring

Flow sensors reliably monitor the coolant in the pipes to control and regulate the optimum cooling capacity.

ifm.com/cnt/leffek
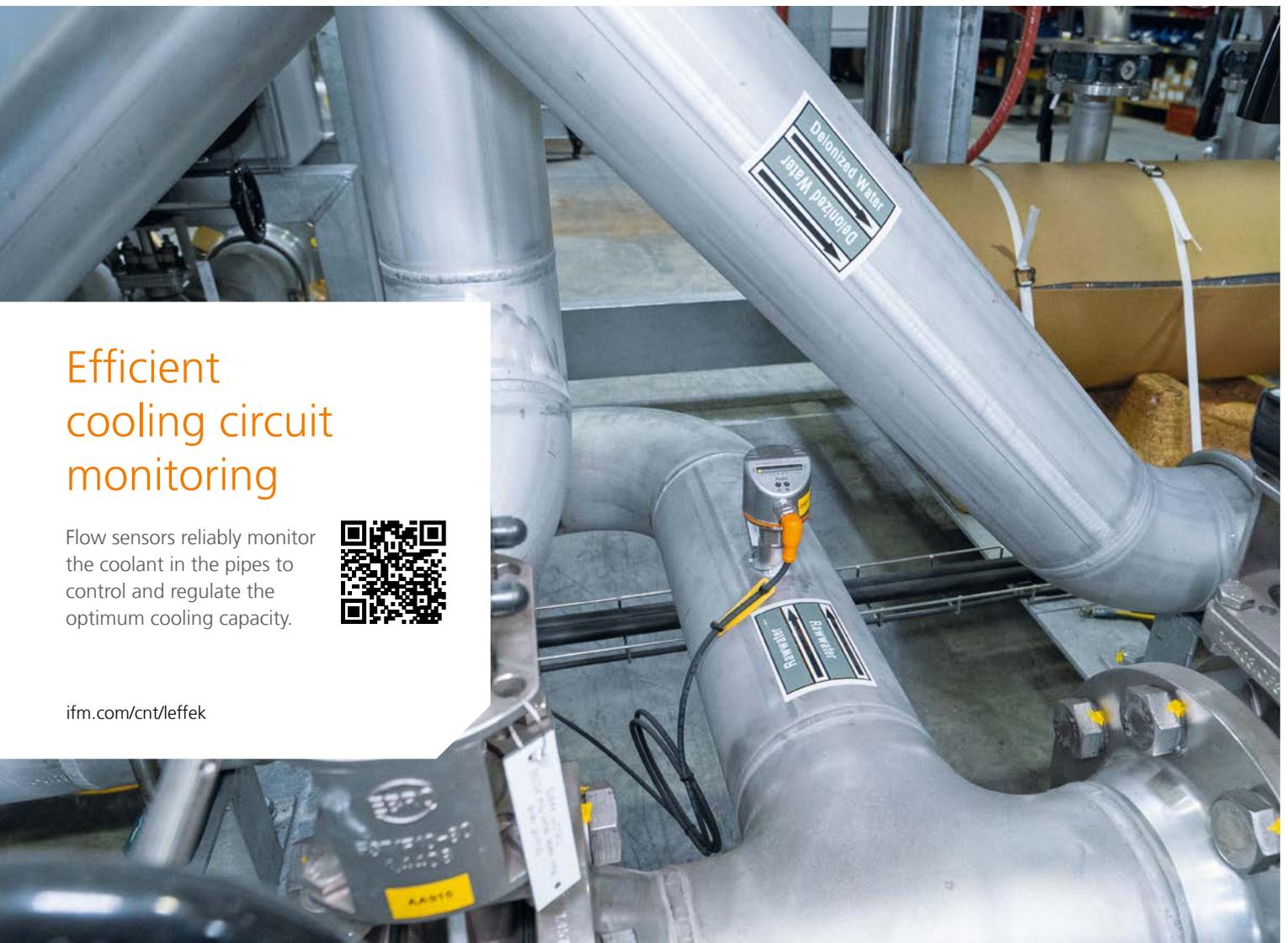
Two measured values – one sensor

In addition to the flow rate, the temperature of the medium is also made available via the IO-Link interface. This saves money on hardware, cabling and installation.

ifm.com/cnt/starrag

Precise flow rate measurement of ultra-pure water

To determine the filter quality of the reverse osmosis system, flow sensors monitor the quantity of ultrapure water and concentrate.

ifm.com/cnt/envirofalk

Utilise the full power of your data

moneo: the IIoT platform for those who care about their plants

„My pulse frequency is 45 per minute when I'm asleep and healthy. If I am ill, it is about 55. Under full exertion, my heart pumps more than three times per second. I run my home course of ten kilometres in less than 50 minutes on a good day and at a temperature of about 20°C. How do I know all that?

The fitness tracker on my wrist collects my body data and my performances on a daily basis and analyses them for me. It helps me understand my body system. I can tell at a glance whether my body can cope with the exertion or whether I'm in the red zone and overexerting."

The sensors on my wrist make my complex human organism transparent to me. While such a thing may have been difficult to imagine in the past, it is hardly anything special for us today. Take a glance at your wrist to check how your body is doing. Just like that.

moneo: the result of a deep understanding of the machine
Monitoring the status and current condition of your machines and plants is very simple. With moneo. For more than half a century, we have had our finger on the pulse of the industry, shaping the evolution of automation. We are now distilling this expertise and in-depth understanding of all kinds of machines and plants from the OT level and combine it with the inexhaustible possibilities of digitalisation. Thanks to our IIoT platform, you can check the condition of your plant at any time. It will show you whether everything is running in the green zone or whether performance is declining, consumption values are getting out of hand or maintenance is required.

Get
actionable insights

Data becomes information.
Information becomes added value.

Your plant already offers the preconditions for it: sensors permanently provide data on temperature, pressure, level and object presence. In most cases, however, this data only reaches the controller. And this only accounts for about 5 per cent of the wealth of knowledge that is available. Thanks to moneo, you can easily benefit from the remaining 95 per cent. Like a fitness tracker, our IIoT platform collects the incoming data, evaluates it and generates information you can use to optimise your processes and workflows and to optimise maintenance schedules.

Never again in the red

Temperature curves, compressed air consumption, cycle times, operating hours, levels, vibration behaviour – whatever may have an influence on the **performance, production quality** and **energy efficiency** of your industrial organism, with

moneo, you will be able to act before your investments will run out of steam and before wear, lacking supplies or defects will lead to downtime or before precious energy will escape ineffectively through leaks. That is real added value. It saves money, nerves and time. You can, for example, rather invest the time you save after work to improve your best time on your 10-kilometre home run.

Do you want to understand your machines and plants better and keep them fit? Are you ready for more information, performance and efficiency?

Then start now. With moneo.

www.moneo.ifm

# Everything the automation heart desires.

The online shop: Find more, search less.

Where does efficient plant automation start? We think: when shopping! And that's why our online shop is designed to guide you to your desired product as quickly as possible. At the same time, we also want to offer you maximum service when shopping online. For example, the selectors help you to narrow down the search to the suitable product versions. In your personal my ifm account you can easily import comprehensive order lists, create your own offers in no time and convert them into an order with just one click.

Products, accessories and interesting facts

Are you looking for the suitable accessories for your product? No problem! We have compiled everything you need to know about installation, parameter setting and set-up and added it to the respective product page. Of course, in our online shop you will also find lots of interesting information about the technologies in our sensors, inspiration in the form of application reports, factory certificates for free download, and, and, and...

So if you are thinking about how to shop more efficiently, a visit to ifm.com is definitely worthwhile!
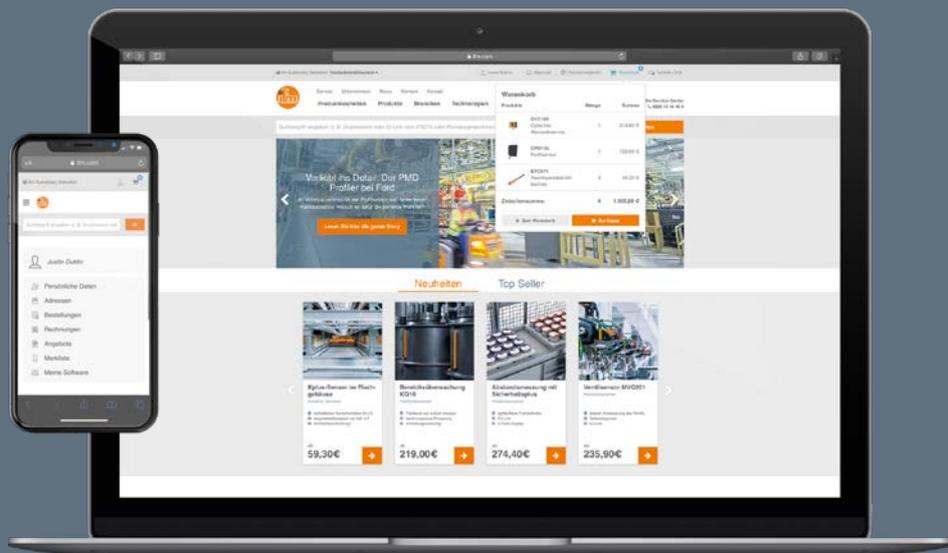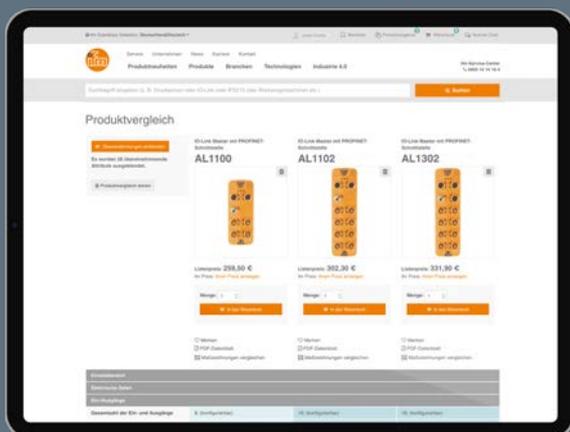
More transparency: Search for products, select, compare, get a support opinion, choose – and buy at your individual price.

More efficiency: Import order lists, create favourites, place previous orders again.

More flexibility: You decide how you pay and when we deliver. If you are in a hurry: use our express shipping.

More you: Create offers yourself, convert them into orders with one click, track shipments and status, save and retrieve invoices. my ifm – it's yours!

More future: Digitisation, Industry 4.0, finding solutions, downloading software, managing licences – all in one place.

More time: No closing times, no nasty surprises, shopping at any time, always up-to-date availability – and a reassuring 6 weeks' right of return.

ifm.com